

## Minisensor2 User guide

## Introduction

The Helvar Minisensor2 is a two channel luminaire-mounted component containing three integrated sensors:

- Presence detector (PIR)
- Constant light sensor
- Infrared (IR) receiver.

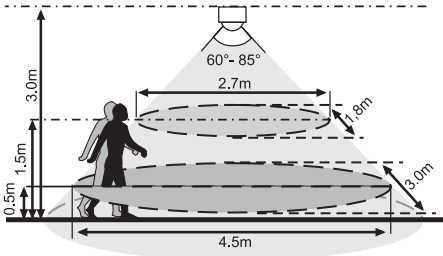
The two separate channels (A & B) enable scene setting & lighting control. The constant light sensor only adjusts the output from channel A, where presence detection & infrared control affect both channels.

The Minisensor2 is only compatible with the Helvar EL-si electronic DALI ballast range. Sensor set-up & programming is achieved using the Helvar DIGIDIM infrared remote control.

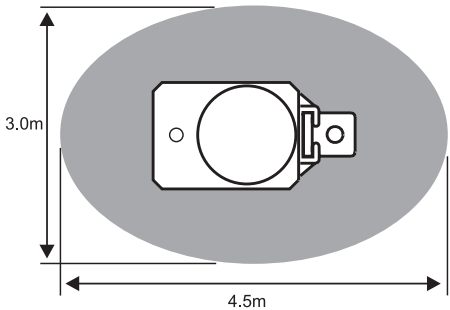


## Reception areas

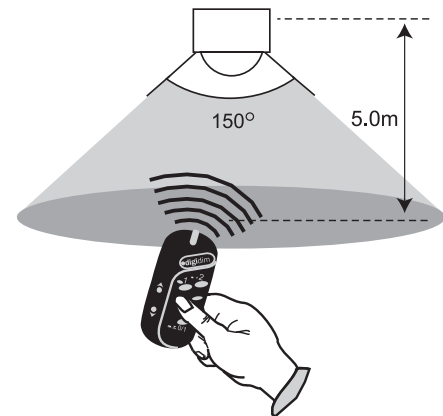
### Presence detector (PIR)



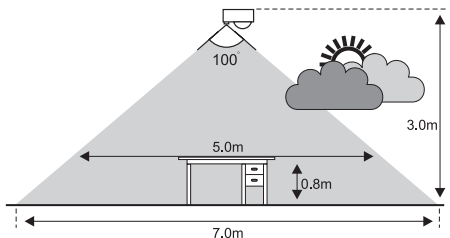
### Orientation (PIR)



### Infrared (IR) control



### Constant light sensor (pipe version)



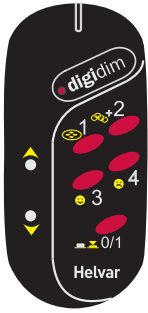
## “Out-of-box” operation

Upon first application of power the Minisensor2 operates according to the programmed memory of the EL-si ballast. If the ballast has no program then the IR buttons “▲”, “▼” and “0/1” (On/Off) will be active. Channel control is also active. This allows the control of channels A&B (please see section “IR-control” for more information). To program default scenes 1-4 and to activate further features, please see the “Initial configuration” section for more information.

Use the Helvar DIGIDIM infrared remote control for configuration.



## Initial configuration (default settings)



Select the operating modes by pressing the below mentioned button combination for about 10 seconds. The product confirms the succesful programming by flashing the lamps

**"0/1" + "1"**

Presence detector (PIR) delay times 15min/20s, PIR on 100%, Power on 100%

**"0/1" + "2"**

PIR 15min/20s, Manual On Auto Off, Power on 100%

**"0/1" + "3"**

PIR 15min/20s, PIR on 100%, Constant light (\*), Power on 100%

**"0/1" + "4"**

PIR 15min/20s, Manual On Auto Off, Constant light (\*), Power on 100%

\*Dim the lights to desired constant light level before selecting the operating mode

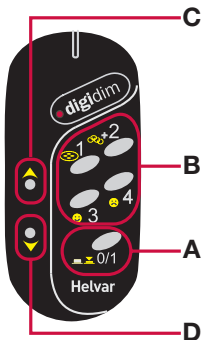
### Default values for operating modes

|                     |      |                |         |
|---------------------|------|----------------|---------|
| Scene 1             | 100% | PIR LOW delay  | 15 min  |
| Scene 2             | 75%  | PIR OFF delay  | 20 sec  |
| Scene 3             | 50%  | PIR Exit delay | 15 min  |
| Scene 4             | 25%  | Power ON level | 100%    |
| PIR ON light level  | 100% | Fade time      | 1.0 sec |
| PIR LOW light level | 1%   |                |         |
| PIR OFF light level | 0%   |                |         |

### Notes:

- Only the light level of channel A will vary in order to try to keep the stored overall constant light level.
- Constant light will not switch lighting on or off.
- The stored constant light level is not affected by the PIR.
- The stored constant light level is not affected by switching the lights off.
- "Manual ON, Automatic OFF" feature = PIR will not switch the lights on when movement is detected, but will switch them off if no movement is detected.
- Regardless of other light level commands (e.g. changes in the constant light level), an enabled PIR will switch the lights to the PIR OFF scene if no movement is detected within its programmed delay time.

## Infrared (IR) control



**C** A "0/1" (ON/OFF) key.

Toggles the lighting between 100%\*) and OFF.

**B** "1", "2", "3" or "4" key.

Recall of stored scene or preset level for the selected key.

**C** "▲" key. Single push.

- Switches channel A & B on to minimum (if lights were off).
- Steps up channel A & B by one step (if lights were on).

Press & hold.

- Dims up channel A & B from minimum (if lights were off).
- Dims up channel A & B from last level (if lights were on).

**D** "▼" key. Single push.

- Steps down channel A & B by one step (if lights were on).

Press & hold.

- Dims down channel A & B from last level (if lights were on).

\*) If constant light has been selected and programmed the Minisensor2 will dim the lights to the programmed constant light level.

### Modify and store scenes (channel A & B)

- Simultaneously press & hold "1" & "▲" or "▼" to raise or lower the light level of channel A to the desired level.
- Simultaneously press & hold "2" & "▲" or "▼" to raise or lower the light level of channel B to the desired level.
- Press & hold (for 10 seconds) the desired remote control scene button ("1", "2", "3" or "4") where you would like the scene to be stored.
- The operation is confirmed by flashing the lamps.
- Repeat the above for other scenes. (buttons "1", "2", "3" or "4")

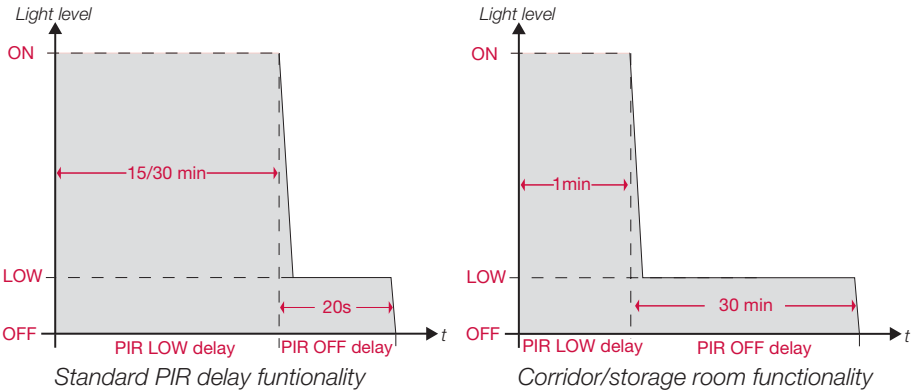
### Notes:

- Scene is a combination of light levels of channel A and B that can be recalled by the press of a button.
- Storing scenes on buttons "1", "2", "3" or "4" will replace any previously stored light levels.

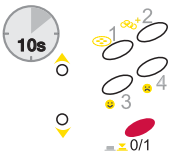
## Optional functions programming

Select the operating modes by pressing the below mentioned button combination for about 10seconds. The product confirms the succesful programming by flashing the lamps.

### Presence detector (PIR)



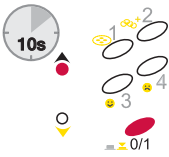
#### Set PIR ON scene



Select the overall desired light level: -See Infrared (IR) control section.

- Simultaneously press & hold “0/1” for 10 seconds.
- The operation is confirmed by flashing the lamps.

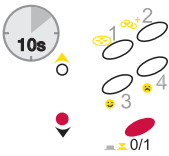
#### Set PIR LOW scene



Select the overall desired light level: -See Infrared (IR) control section.

- Simultaneously press & hold “0/1” & “” for 10 seconds.
- The operation is confirmed by flashing the lamps.

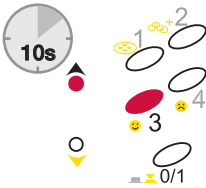
#### Set PIR OFF scene



Select the overall desired light level: -See Infrared (IR) control section.

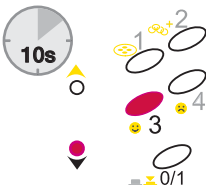
- Simultaneously press & hold “0/1” & “▼” for 10 seconds.
- The operation is confirmed by flashing the lamps.

#### PIR delay time setting



Standard PIR delay functionality with 30min delay to PIR LOW scene and 20s delay to PIR OFF scene.

- Simultaneously press & hold “3” & “▲” for 10 seconds.
- The operation is confirmed by flashing the lamps.



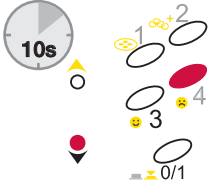
Corridor / storage room functionality with 1min delay to PIR LOW scene and 30min delay to PIR OFF scene.

- Simultaneously press & hold “3” & “▼” for 10 seconds.
- The operation is confirmed by flashing the lamps.

#### Notes:

- Regardless of other light level commands (e.g. changes in the constant light level), an enabled PIR will switch the lights to the PIR OFF scene if no movement is detected within its programmed delay time.
- PIR scenes can be any combination of light levels of channels A & B.
- If you manually turn lights off you might have to manually switch them on, PIR will not switch lights on until PIR LOW delay (PIR Exit delay)

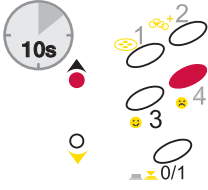
## Last level function



- Simultaneously press & hold “4” & “▼” for 10 seconds.
- The operation is confirmed by flashing the lamps.
- If last level function is enabled, the lights will turn on to the level they were at before mains interruption (failure or mains switch). Lights that were off will remain off
- Last level function is deactivated by carrying out Initial configuration.

## Test mode

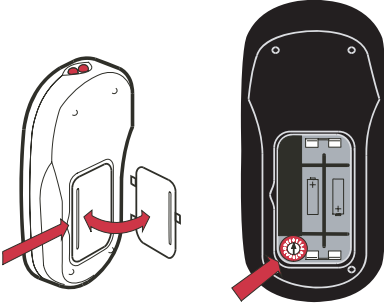
This mode should only be used to test the functionality during installation. In Test mode PIR delay times are 10 times faster and the constant light response time is 10 times quicker than in normal operation and should only be used for demonstration or test purposes.



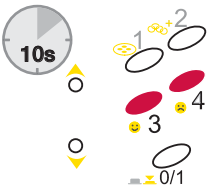
- **Enable:** Simultaneously press & hold “4” & “▲” for 10 seconds. (The operation is confirmed by flashing the lamps **twice**.)
- **Disable:** Simultaneously press & hold “4” & “▲” for 10 seconds. (The operation is confirmed by flashing the lamps)
- Test mode is returned to normal mode by turning power off and on again; you can use e.g. Switch Control to reset the Minisensor2 (both channels at the same time)
- Test mode is also returned to normal mode automatically after a delay of 10 min
- Test mode is also returned to normal mode by pressing preset buttons for 10 sec (“0/1” + “1”, “0/1” + “2”, “0/1” + “3” or “0/1” + “4”) This will also change the functionality to selected mode.

## Programming of IR channel

This allows multiple remotes to work in same area without affecting each others.



- Set the rotary switch of the remote control (in battery compartment) to an address group (0-F).
  - All minisensors will respond to DIGIDIM remote controls set to address 0 or D.
  - If more than one remote control will be used to control different minisensors in the same area the remote controls must be addressed to different groups (1-9, A, B, C, E or F). The Minisensor2 will then respond to its corresponding remote control only.



- Always point the remote control directly at the Minisensor2 to be configured.
  - Take care that no other minisensor is in the IR-reception area unless they are supposed to belong to the same address.
- Point at the Minisensor2 to be addressed and press “3” & “4” for 10 seconds or until lights flash.

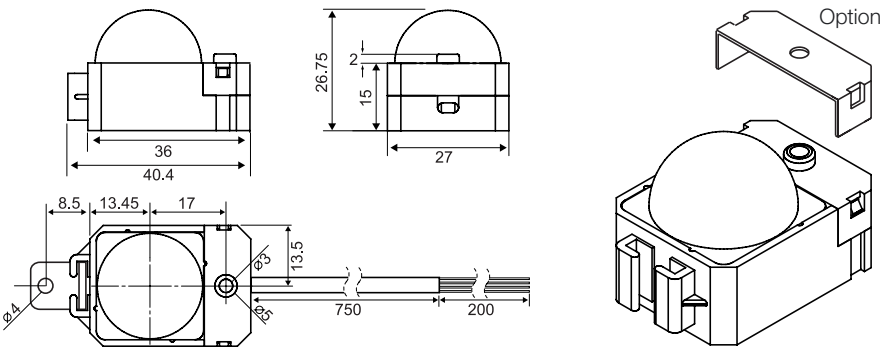
## Recommendations

- First choose the basic mode by “0/1” + “1-4”.
- Then choose any additional functionality: Delay time, PIR levels and power on to last level.
- Ensure that the Minisensor2 is located out of view of direct light to ensure correct operation of the constant light sensor and IR.
- Position the Minisensor2 in a area of combined natural + artificial light for best operation of the constant light feature
- If multiple sensors are installed, care should be taken to ensure the sensing areas of the minisensors do not cross and interfere with each other.
- Only connect the Minisensor2 to the DIGIDIM input of a Helvar EL-si ballast.
- The Minisensor2 cannot be connected to the DALI interface.

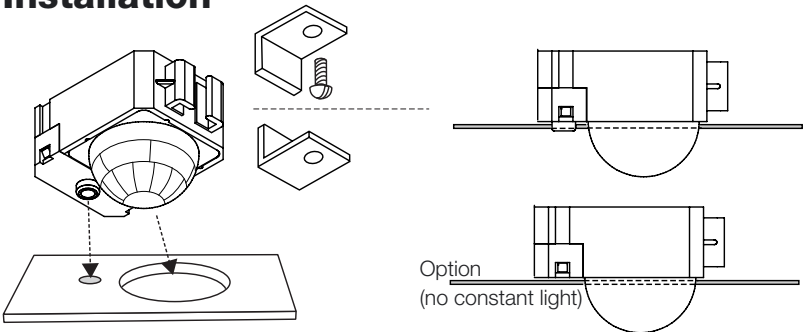
# Technical spesifications

|  |   |
|--|---|
| <b>Constant light sensor</b><br>Reception area: 100°<br>Measuring range: 100-1500 lux  | <b>Conformity &amp; Standards</b><br><b>Safety:</b> Only valid if sensor is mounted in the same fitting as the ballasts<br><b>Safety:</b> EN61347-2-11,EN61347-1, EN60598-1 |
| <b>IR-receiver</b><br>Frequency 36kHz  | <b>IP rating</b> 21<br><b>Electric strength</b> 1.5kV   |
| <b>Presence detector</b><br>Detection area 4.5 x 3.0m<br>(mounting height 3.0m)  | <b>Finishing:</b> Thermoplastic   |
| <b>Electric data</b><br>Internal communication with Helvar EL-si electronic ballast  | <b>Protection:</b> Single insulation  |
| <b>Operation conditions</b><br>Ambient temperature range 0°C to 50°C<br>Storage temperature range -10°C to 70°C<br>Relative humidity 90% max. non-condensing | <b>Wire length:</b> Max. from Minisensor2 to furthest ballast 15m   |
|  | <b>Note:</b> <ul style="list-style-type: none"><li>The Minisensor2 is not designed for installation outside of a luminaire</li></ul>  |

## Dimensions



## Installation

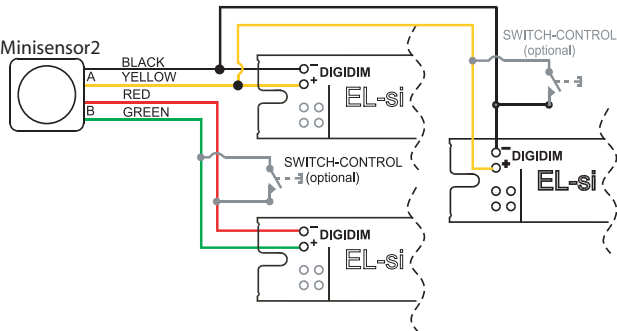


## Connection

Up to 4 ballasts per Minisensor2. Connection combinations are found from the following table.

|                 | Channel |    |    |    |
|-----------------|---------|----|----|----|
|                 | A       | B  |    |    |
| Lead color      | Yel     | Bl | Gr | Rd |
| Polarity        | +       | -  | +  | -  |
| No. of ballasts | 0       | 4  |    |    |
|                 | 1       | 3  |    |    |
|                 | 2       | 2  |    |    |
|                 | 3       | 1  |    |    |
|                 | 4       | 0  |    |    |

Example connection Ch A: 2pcs, Ch B: 1pcs



|     |                    |
|-----|--------------------|
| FIN | +358 9 56 541      |
| UK  | +44 1322 222211    |
| S   | +46 303 24 69 50   |
| I   | +39 02 55 30 10 33 |
| D   | +49 6074 92 090    |